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10/699,412	10/31/2003	Josephus C. Ebergen	SUN-P9550	2088

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EXAMINER	
COONEY, ADAM A	
ART UNIT	PAPER NUMBER
2444	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,412	EBERGEN ET AL.	
	Examiner	Art Unit	
	ADAM COONEY	2444	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the amendment filed on 6/30/2009. Claims 1, 3, 11 and 20 were amended. Therefore, claims 1-20 are pending.

Response to Arguments

2. Applicant's argument, see page 8, with respect to the objection to the drawings has been fully considered and is persuasive. Therefore, the objection is withdrawn.

3. Applicant's argument, see page 8, with respect to the objection of claim 3 has been fully considered and is persuasive. Therefore, the objection is withdrawn.

4. Applicant's arguments, see page 8, with respect to the rejection of claims 1-20 under 35 U.S.C 102(b) have been fully considered but are not persuasive. The applicant asserts that Orsic does not teach the amended limitation "*wherein each cell further comprises an arbiter configured to block propagation of the token to a next cell until the corresponding transmitter completes its transmission*". Specifically, the applicant states that Orsic teaches away from this by disclosing the active crosspoint element passes the E-bit immediately after it has established connection (see Remarks page 9). However, the examiner disagrees with this assertion. The examiner would like to point out that Orsic teaches that the crosspoint elements are operative in two modes: a first mode where received tokens are passed on without being stored, and a second mode where received tokens are stored before being passed on (see Orsic column 2 lines 45-50). In the second mode, the crosspoint element stores the E-bit in a flip-flop before passing it on (see Orsic column 6 lines 6-9). Therefore, the flip-flop serves as the claimed "*arbiter*" because it also "*blocks propagation of the token to a next cell*" by storing it before it can be passed on. Further,

the E-bit is not passed on from the flip-flop until the R-line is low, meaning the input controller has completed the transmission of the packet (see column 5 lines 27-30, Figures 3-4; in S2 R-line is high, packet transferred and in S3 R-line is low, transmission completed and Figures 5-6; in S3 E-bit to be passed on, also the R-line is low). Therefore, Orsic does teach "*wherein each cell further comprises an arbiter configured to block propagation of the token to a next cell until the corresponding transmitter completes its transmission*". As such, the rejection is maintained.

5. Applicant's argument, see page 9, with respect to the rejection of claims 2-10, 11-19 under 35 U.S.C. 102(b) has been fully considered but is moot in view of the dependency upon rejected independent claims. Therefore, the rejection is maintained.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Orsic (U.S. 4,817,082).

6. Regarding independent claim 1, Orsic teaches a system for regulating communications between a plurality of transmitters (input controllers) and a receiver (output controllers) (see column 3 lines 48-53 and Figure 1; input controller transmits a packet to output controller, therefore input controller is the transmitter and output controller is the receiver), comprising: a plurality of cells (see Figure 1; crosspoint elements, i.e. 107-11 and 107-21), wherein each cell

controls communications from a transmitter in the plurality of transmitters to the receiver; wherein the plurality of cells are arranged in a token ring (control ring) that regulates communications from the plurality of transmitters to the receiver; and wherein the presence of a token within a token ring cell indicates that the corresponding transmitter may communicate with the receiver (see column 2 lines 9-35, column 4 lines 16-20 and Figure 1; an array of crosspoint elements each associated with one of the input means and one of the output means, each crosspoint element is associated with its own control ring, the control mechanism is efficient in enabling packet transmission, further each crosspoint element is responsive to a token for switching information from its associated input means to its associated output means); and wherein each cell further comprises an arbiter (flip-flop) configured to block propagation of the token to a next cell until the corresponding transmitter completes its transmission (see column 5 lines 27-30, column 6 lines 6-9, Figures 3-4; in S2 R-line is high, packet transferred and in S3 R-line is low, transmission completed and Figures 5-6; in S3 E-bit to be passed on, also the R-line is low).

7. Regarding claim 2, Orsic teaches all the limitations of independent claim 1, as discussed above. Further, Orsic teaches a plurality of receivers (see Figure 1); and a plurality of token rings (see column 2 lines 32-33 and Figure 1), wherein each token ring passes a corresponding token among token ring cells that control communications from the plurality of transmitters to a receiver corresponding to the token ring (see column 2 lines 13-29, column 3 lines 34-37 and column 4 lines 16-20).

8. Regarding claim 3, Orsic teaches all the limitations of claim 2, as discussed above. Further, Orsic teaches wherein the plurality of cells are arranged in a grid (array) wherein a row

corresponds to a transmitter and a column corresponds to a receiver (see column 2 lines 25-29 and Figure 1).

9. Regarding claim 4, Orsic teaches all the limitations of independent claim 1, as discussed above. Further, Orsic teaches wherein the communications can include one of: an electrical signal; a mechanical signal; and an optical signal (see column 3 lines 52-58 and Figure 1, it is inherent that when using bus lines, i.e. R and G lines, that an electrical signal is used).

10. Regarding clam 5, Orsic teaches all the limitations of independent claim 1, as discussed above. Further, Orsic teaches wherein each cell is configured to receive a request signal from a corresponding transmitter, and in response to the request signal, is configured to issue an acknowledgement signal (grant signal) to the corresponding transmitter which allows the corresponding transmitter to begin transmitting if the cell has the token (see column 3 lines 48-68 through column 4 lines 1-6 and 16-20, also column 5 lines 12-26).

11. Regarding claim 6, Orsic teaches all the limitations of claim 5, as discussed above. Further, Orsic teaches wherein each transmitter further comprises a reset mechanism that is configured to release the clearance to communicate with the receiver by resetting the request signal (see column 4 lines 6-8 and column 5 lines 27-30; once transmission of the packet is complete the input controller "resets" by applying a low signal to the R line of the bus).

12. Regarding claim 7, Orsic teaches all the limitations of claim 6, as discussed above. Further, Orsic teaches wherein the system further comprises an acknowledgement mechanism configured to confirm the release of the clearance by resetting the acknowledgement signal (see column 4 lines 9-13 and column 5 lines 30-32; the system "confirms the release" by the crosspoint element removing the grant signal from the G line of the bus).

13. Regarding claim 8, Orsic teaches all the limitations of independent claim 1, as discussed above. Further, Orsic teaches an initialization mechanism configured to initialize the single token in the token ring (see column 3 lines 34-35 and column 4 lines 67-68 through column 5 lines 1-4; generates a new "token", E-bit, therefore initializing the E-bit).

14. Regarding claim 9, Orsic teaches all the limitations of independent claim 1, as discussed above. Further, Orsic teaches wherein the system operates asynchronously (see column 5 lines 12-34; input controller requests, waits for and receives grant signal, then transmits packet, therefore asynchronous because it is not simultaneous).

15. Regarding claim 10, Orsic teaches all the limitations of independent claim 1, as discussed above. Further, Orsic teaches wherein the system additionally comprises a flow control mechanism configured to selectively limit the communications from the transmitter to the receiver at the request of the receiver (see column 6 lines 28-36; "receiver"/output controller provides flow control and applies a busy signal to stop the flow of packets).

16. Regarding independent claim 11, Orsic teaches a method for regulating communications between a plurality of transmitters (input means/input controllers) and a receiver (output means/output controllers) (see column 3 lines 48-53 and Figure 1, i.e. 101-1 and 102-1; input controller transmits a packet to output controller, therefore input controller is the transmitter and output controller is the receiver), comprising: receiving a request signal from a transmitter at a cell (crosspoint element) in a plurality of cells requesting to communicate with the receiver (see column 3 lines 52-62, column 5 lines 16-22 and column 6 lines 3-7); wherein the plurality of cells are arranged in a token ring (control ring) that regulates communications from the plurality of transmitters to the receiver (see column 2 lines 11-24 and Figure 1); and wherein each cell

further comprises an arbiter (flip-flop) configured to block propagation of the token to a next cell until the corresponding transmitter completes its transmission (see column 5 lines 27-30, column 6 lines 6-9, Figures 3-4; in S2 R-line is high, packet transferred and in S3 R-line is low, transmission completed and Figures 5-6; in S3 E-bit to be passed on, also the R-line is low); and in response to the request signal, issuing an acknowledgement signal (grant signal) to the transmitter which allows the transmitter to begin transmitting if the presence of a token is detected within the cell (see column 3 lines 48-68 through column 4 lines 1-6 and 16-20, also column 5 lines 12-26).

17. Regarding claim 12, Orsic teaches all the limitations of independent claim 11, as discussed above. Further, Orsic teaches wherein the plurality of cells include a plurality of token rings (see column 2 lines 32-33 and Figure 1), wherein each token ring passes a corresponding token among token ring cells that control communications from the plurality of transmitters to a receiver corresponding to the token ring (see column 2 lines 13-29, column 3 lines 34-37 and column 4 lines 16-20).

18. Regarding claim 13, Orsic teaches all the limitations of independent claim 11, as discussed above. Further, Orsic teaches wherein a plurality of cells that regulate communications between the transmitters and receivers are arranged in a grid (array) wherein a row corresponds to a transmitter and a column corresponds to a receiver (see column 2 lines 25-29 and Figure 1).

19. Regarding claim 14, Orsic teaches all the limitations of independent claim 11, as discussed above. Further, Orsic teaches wherein the communications can include one of: an

electrical signal; a mechanical signal; and an optical signal (see column 3 lines 52-58 and Figure 1, it is inherent that using bus lines, i.e. R and G lines, that an electrical signal is used).

20. Regarding claim 15, Orsic teaches all the limitations of independent claim 11, as discussed above. Further, Orsic teaches revoking the permission for the transmitter to communicate with the receiver when the transmitter resets the request signal (see column 4 lines 6-8 and column 5 lines 27-32).

21. Regarding claim 16, Orsic teaches all the limitations of claim 15, as discussed above. Further, Orsic teaches resetting the acknowledgement signal to confirm the revocation of the permission for the transmitter to communicate with the receiver (see column 4 lines 9-13 and column 5 lines 30-32).

22. Regarding claim 17, Orsic teaches all the limitations of independent claim 11, as discussed above. Further, Orsic teaches initializing the token in the token ring (see column 3 lines 34-35 and column 4 lines 67-68 through column 5 lines 1-4).

23. Regarding claim 18, Orsic teaches all the limitations of independent claim 11, as discussed above. Further, Orsic teaches wherein the system operates asynchronously (see column 5 lines 12-34; input controller requests, waits for and receives grant signal, then transmits packet, therefore asynchronous because it is not simultaneous).

24. Regarding claim 19, Orsic teaches all the limitations of independent claim 11, as discussed above. Further, Orsic teaches controlling the flow of communications by selectively limiting the communications from the transmitter to the receiver at the request of the receiver (see column 6 lines 28-36; "receiver"/output controller provides flow control and applies a busy signal to stop the flow of packets).

25. Regarding independent claim 20, Orsic teaches a multi-processor system, comprising: a plurality of processors (see column 3 lines 1-9 and Figure 1, i.e. 11 and 21; input devices and output devices include terminal equipment, therefore the terminals are the processors); a plurality of transmitters (input controllers) associated with the processors; a plurality of receivers (output controllers) associated with the plurality of processors (see column 3 lines 48-53 and Figure 1; input controller transmits a packet to output controller, therefore input controller is the transmitter and output controller is the receiver); a plurality of cells(see Figure 1; crosspoint elements, i.e. 107-11 and 107-21), wherein each cell controls communications from a transmitter in the plurality of transmitters to a receiver; wherein the plurality of cells are arranged in a token ring (control ring) that regulates communications from the plurality of transmitters to a receiver; and wherein the presence of a token within a token ring cell indicates that the corresponding transmitter may communicate with the receiver (see column 2 lines 9-35, column 4 lines 16-20 and Figure 1; an array of crosspoint elements each associated with one of the input means and one of the output means, each crosspoint element is associated with its own control ring, the control mechanism is efficient in enabling packet transmission, further each crosspoint element is responsive to a token for switching information from its associated input means to its associated output means); and wherein each cell further comprises an arbiter (flip-flop) configured to block propagation of the token to a next cell until the corresponding transmitter completes its transmission (see column 5 lines 27-30, column 6 lines 6-9, Figures 3-4; in S2 R-line is high, packet transferred and in S3 R-line is low, transmission completed and Figures 5-6; in S3 E-bit to be passed on, also the R-line is low).

Conclusion

26. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

27. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

28. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM COONEY whose telephone number is (571)270-5653. The examiner can normally be reached on Monday-Thursday and every other Friday from 730AM-5PM..

29. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William C. Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

30. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C./
Examiner, Art Unit 2444
10/28/2009

/William C. Vaughn, Jr./
Supervisory Patent Examiner, Art Unit 2444